

Please type a plus sign (+) inside this box → ☐

PTO/SB/01 (12-97)
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Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) <input type="checkbox"/> Declaration Submitted with Initial Filing OR <input checked="" type="checkbox"/> Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)	Attorney Docket Number	426.97.265
	First Named Inventor	DeWitte
	COMPLETE IF KNOWN	
	Application Number	09 / 220,363
	Filing Date	December 24, 1998
	Group Art Unit	Not Assigned
	Examiner Name	Not Assigned

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**System and Method for Structure-Based Drug Design That
Includes Accurate Prediction of Binding Free Energy**

(the specification of which

(Title of the Invention)

☐ is attached hereto
OR

☒ was filed on (MM/DD/YYYY) 12/24/98 as United States Application Number or PCT International

Application Number 09/220,363 and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

(Page 1 of 4)

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DECLARATION — Utility or Design Patent Application

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U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)
08/741,866	09/26/96	

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

<input type="checkbox"/> Customer Number <input type="text"/>		<input type="checkbox"/> Registered practitioner(s) name/registration number listed below	
Name	Registration Number	Name	Registration Number
Keum J. Park	42,059		

☒ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☐ Customer Number or Bar Code Label OR ☒ Correspondence address below

Name	Keum J. Park					
Address	Hale and Dorr LLP					
Address	60 State Street					
City	Boston	State	MA	ZIP	02109	
Country	USA	Telephone	617-526-6110		Fax	617-526-5000

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))				Family Name or Surname			
Robert S.				DeWitte			
Inventor's Signature						Date	3-9-99
Residence: City	Gurnee	State	IL	Country	USA	Citizenship	Canada
Post Office Address	1518 Almaden Lane						
Post Office Address							
City	Gurnee	State	IL	ZIP	60031	Country	USA

☒ Additional inventors are being named on the 1 supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

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DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet Page <u>1</u> of <u>1</u>
--------------------	--

Name of Additional Joint Inventor, if any:				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle [if any])				Family Name or Surname			
Eugene I.				Shakhnovich			
Inventor's Signature					Date		
Residence: City		Lexington	State	MA	Country	USA	Citizenship USA
Post Office Address		16 Woodcliffe Road					
Post Office Address							
City		Lexington	State	MA	ZIP	02173	Country USA
Name of Additional Joint Inventor, if any:				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle [if any])				Family Name or Surname			
Inventor's Signature					Date		
Residence: City			State		Country		Citizenship
Post Office Address							
Post Office Address							
City			State		ZIP		Country
Name of Additional Joint Inventor, if any:				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle [if any])				Family Name or Surname			
Inventor's Signature					Date		
Residence: City			State		Country		Citizenship
Post Office Address							
Post Office Address							
City			State		ZIP		Country
Name of Additional Joint Inventor, if any:				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle [if any])				Family Name or Surname			
Inventor's Signature					Date		
Residence: City			State		Country		Citizenship
Post Office Address							
Post Office Address							
City			State		ZIP		Country

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[Page 3 of 4]

Figure 1

Figure 1 displays the mean values of the dependent variables for each group across the four time points (T0, T1, T2, T3). The y-axis represents the mean value, ranging from 0 to 100. The x-axis shows the groups: Control, Low Intensity, Moderate Intensity, and High Intensity. The legend indicates the time points: T0 (black), T1 (white), T2 (light gray), and T3 (dark gray).

Group	T0	T1	T2	T3
Control	~65	~70	~75	~80
Low Intensity	~60	~65	~70	~75
Moderate Intensity	~55	~60	~65	~70
High Intensity	~50	~55	~60	~65

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DECLARATION

REGISTERED PRACTITIONER INFORMATION (Supplemental Sheet)

Name	Registration Number	Name	Registration Number
James B. Lampert	24,564		
Wayne M. Kennard	30,271		
Michael J. Bevilacqua	31,091		
Hollie L. Baker	31,321		
Henry N. Wixon	32,073		
Anne-Louise Kerner	33,523		
Wayne A. Keown	33,923		
Michael A. Diener	37,122		
Donald R. Steinberg	37,241		
Gretchen A. Rice	37,429		
Peter M. Dichiaro	38,005		
Richard A. Goldenberg	38,895		
Colleen Superko	39,850		
Scott M. Alter	32,879		
Barbara A. Barakat	32,190		
Edward D. Grieff	38,898		
Jason A. Reyes	41,513		
Rajesh Vallabh	35,761		

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			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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☐ Customer Number

OR

☒ Registered practitioner(s) name/registration number listed below

Place Customer Number Bar Code Label here

Name	Registration Number	Name	Registration Number
Keum J. Park	42,059		

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OR ☒ Correspondence address below

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Address	60 State Street				
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Country	USA	Telephone	617-526-6110	Fax	617-526-5000

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Name of Sole or First Inventor:

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Given Name (first and middle [if any])		Family Name or Surname	
Robert S.		DeWitte	
Inventor's Signature			Date
Residence: City	Gurnee	State	IL
		Country	USA
Post Office Address	1518 Almaden Lane		
Post Office Address			
City	Gurnee	State	IL
		ZIP	60031
		Country	USA

☒ Additional inventors are being named on the 1 supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

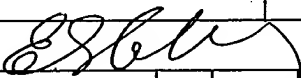
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Name of Additional Joint Inventor, if any:				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle [if any])				Family Name or Surname			
Eugene I.				Shakhnovich			
Inventor's Signature				3-23-99 Date			
Residence: City		Lexington		State MA		Country USA	
Post Office Address		16 Woodcliffe Road					
Post Office Address							
City		Lexington		State MA		ZIP 02173	
				Country		USA	

Name of Additional Joint Inventor, if any:				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
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P10/SH/02C (3-97)

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Gretchen A. Rice	37,429		
Peter M. Dichiaro	38,005		
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ASSIGNMENT

COPY

WHEREAS, I, Robert S. DeWitte, being a citizen of Canada, residing at 1518 Almaden Lane, Gurnee, IL 60031, and Eugene I. Shakhnovich, residing at 16 Woodcliffe Road, Lexington, MA 02173, am an inventor of certain new and useful inventions and discoveries, for which I have made an application for Letters Patent entitled System and Method for Structure-Based Drug Design That Includes Accurate Prediction of Binding Free Energy, U.S. Serial No. 09/220,363, a declaration for which I have executed on an even day; and

WHEREAS, Harvard University, a University whose address is University Place, 124 Mt. Auburn Street, Cambridge, MA 02138, and which, together with its successors and assigns is hereinafter called "ASSIGNEE," is desirous of acquiring the title, rights, benefits, and privileges hereinafter recited;

NOW, THEREFORE, for and in consideration of good and valuable consideration furnished by ASSIGNEE to me, receipt and sufficiency of which I hereby acknowledge, I hereby, without reservations:

1. Assign, transfer, and convey to ASSIGNEE the entire right, title, and interest in and to said inventions and discoveries, said application for Letters Patent, any and all other applications for Letters Patent on said inventions and discoveries in whatsoever countries, including all divisional, renewal, substitute, continuation, continuation-in-part, and convention applications based in whole, or in part, upon said inventions or discoveries, or upon said applications, and any and all Letters Patents, reissues, and extensions of Letters Patent granted for said inventions and discoveries or upon said applications, and every priority right that is or may be predicated upon, or arise from, said inventions, said discoveries, said applications, and said Letters Patent;

2. Authorize ASSIGNEE to file patent applications in any or all countries on any or all of said inventions and discoveries in my name or in the name of

ASSIGNEE or otherwise as ASSIGNEE may deem advisable, under International Conventions or otherwise;

3. Authorize and request the Commissioner of Patents and Trademarks of the United States of America and the empowered officials of all other governments throughout the world to issue or transfer all said Letters Patents to ASSIGNEE, as assignee of the entire right, title, and interest therein or otherwise as ASSIGNEE may direct;

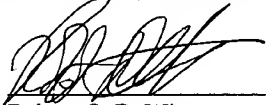
4. Warrant that I have not knowingly conveyed to others any right in said inventions, discoveries, applications, or patents, or any license to use the same, or to make, use, or sell anything embodying or utilizing any of said inventions or discoveries; and that I have good right to assign the same to ASSIGNEE without encumbrance;

5. Bind my heirs, legal representatives, and assigns, as well as myself, to do, upon ASSIGNEE's request and at ASSIGNEE's expense, but without additional consideration to me or them, all acts reasonably serving to assure that said inventions and discoveries, said patent applications, and said Letters Patents shall be held and enjoyed by ASSIGNEE as fully and entirely as the same could have been held and enjoyed by me, our heirs, legal representatives, and assigns if this Assignment had not been made; and particularly to execute and deliver to ASSIGNEE all lawful application documents including petitions, specifications, and oaths, and all assignments, disclaimers, and lawful affidavits in form and substance as may be requested by ASSIGNEE; and to communicate to ASSIGNEE all facts known to me relating to said inventions and discoveries or the history thereof, and to testify as to the same in any court or proceeding; and to furnish ASSIGNEE any and all documents, photographs, models, samples, and other physical exhibits in my control or in the control of my heirs, legal representatives, or assigns which may be useful

for establishing the facts of my conceptions, disclosures, and reduction to practice of said inventions and discoveries.

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal.

DATE: Mar 9/99


Robert S. DeWitte

WITNESSED BY:

Michelle K DeWitte
Name

Michelle K DeWitte

1518 Alameda Ln
Gurnee IL 60031
Address

DATE: Mar 9/99

DATE: _____

Eugene I. Shakhnovich

WITNESSED BY:

Name

Address

DATE: _____

for establishing the facts of my conceptions, disclosures, and reduction to practice of said inventions and discoveries.

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal.

DATE: _____

Robert S. DeWitte


WITNESSED BY:

Name

Address

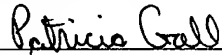
DATE: _____

DATE: 3-23-99



Eugene I. Shakhnovich

WITNESSED BY:



Name

Harvard University
Mallinckrodt B9-33
12 Oxford Street
Cambridge, MA 02138

Address

DATE: 3-23-99